

REMARKS**Claim Objections**

The Office Action objected to claims 13 and 20 because of duplication of the phrase “of updating.” Applicants in this paper have amended claims 13 and 20 with appropriate corrections.

Claim Rejections – 35 U.S.C. § 102

The Office Action rejected all independent claims 1, 8, and 14 under 35 U.S.C. § 102(a) on grounds that the elements of these claims are anticipated by Zwiegincew, et al., (U.S. Pat. No. 6,633,968), hereafter “Zwiegincew.” Claim 1 as currently amended recites:

1. (Currently Amended) A method of loading data from disk in a data processing system, comprising:

comparing a current sequence of disk requests to data indicative of a previous sequence of disk requests;

responsive to detecting a match between the current sequence and the previous sequence, storing a copy of data blocks accessed during the current sequence in a contiguous portion of the disk; and

responsive to a subsequent request for data in the disk sequence, mapping the request to the sequential portion of the disk and servicing the request from data in the sequential portion;

wherein the contiguous portion of the disk to which the data is
copied is on a different partition of the disk than a disk partition
on which the original data is stored.

Claims 8 and 14 recite respectively computer program product and computer system aspects of the method of claim 1. The same arguments regarding patentability, therefore, apply equally to all three of the independent claims in this case.

Regarding anticipation of the independent claims under 35 U.S.C. § 102, the Office Action argued that “the claimed steps of comparing and detecting a match are inherent in the method taught by Zwiegincew because Zwiegincew discloses that the order in which the pages are accessed (i.e. the sequence of the disk requests) is determined based on the assumption that the disk access patterns are similar from run to run (i.e. at least one match in the sequence of disk requests is found and it is assumed that the same sequence will be called again in the next/future run) ...” The Office Action then cites Zwiegincew at column 2, lines 11-24, against the independent claims. Zwiegincew at column 2, lines 11-24, states:

Another prior solution involves strategically ordering pages in disk storage. According to this prior solution, the order in which pages will likely be accessed during typical usage of an application program is determined based on the assumption that disk access patterns are similar from run to run. Then, pages are stored in disk storage in the determined order. A strategic ordering of pages will result in a reduction of hard page fault times. However, this approach is somewhat limited by the fact pages may be accessed more than once by an application program. Therefore, additional hard page faults may occur when a particular page must be re-retrieved from disk storage. Strategically ordering pages in disk storage tends to work best when it is employed to reduce hard page faults in a single hard page fault scenario, typically boot.

That is, Zwiegincew discloses methods of reducing “hard page fault times,” which are random access memory faults. A random access memory fault may be a cause of a disk access, but the discussion of ways of reducing hard page fault times for random access memory faults in no way discloses the inventive methods and products for loading data

from disk in a data processing system as claimed here. There is no assumption in Zwiegincew that disk access patterns are similar from run to run.

The discussion in Zwiegincew concerns patterns of hard page fault times, not sequences of disk access. The quote just above emphatically teaches away from the use of patterns of disk access as claimed in the present application by asserting, “However, this approach is somewhat limited by the fact pages may be accessed more than once by an application program. Therefore, additional hard page faults may occur when a particular page must be re-retrieved from disk storage.” In fact, storing a copy of data blocks accessed during the current sequence in a contiguous portion of the disk as claimed in the present application will overcome the problem cited in Zwiegincew at column 2, lines 11-24, by assuring that all of the data blocks accessed during an access sequence are stored in sequence on the disk drive – *regardless whether they involve RAM pages accessed more than once.*

The term “sequence” occurs ten times in Zwiegincew, and each and every reference in Zwiegincew to the term “sequence” is in the context of a “hard page fault sequence.” There is not one word in Zwiegincew comparing sequences of disk accesses. To the extent that Zwiegincew is concerned with a “sequence” of any kind, Zwiegincew is totally and exclusively concerned with sequences of hard page faults – which does not disclose the use of disk access sequences as claimed here. More specifically, nothing in Zwiegincew discloses any comparison of a current sequence of disk requests to data indicative of a previous sequence of disk requests. Nothing in Zwiegincew discloses any detecting of a match between a current sequence and a previous sequence or storing a copy of data blocks accessed durin the current sequence in a contiguous portion of the disk. And nothing in Zwiegincew discloses mapping of a subsequent request to the sequential portion of the disk as claimed here.

Claim Rejections – 35 U.S.C. § 103**Remarks Regarding Claims 7, 11, and 18**

The Office Action rejected dependent claims 7, 11, and 18 under 35 U.S.C. § 103(a) as obvious over Zwiegincew in view of Brady (U.S. Pat. No. 5,758,050), hereafter “Brady.” Original claim 7, now cancelled, recited:

7. The method of claim 1, wherein the contiguous portion of the disk to which the data is copied is on a different partition of the disk than a disk partition on which the original data is stored.

Original dependent claims 11 and 18, now also cancelled, recited respectively computer program product and computer system aspects of the method of claim 7. The same arguments regarding patentability, therefore, apply equally to all three of these dependent claims in this case.

The office action rejects claim 7 on grounds that Brady (U.S. Pat. 5,758,050) at column 2, lines 28-37, discloses the following limitation of claim 7: “... the contiguous portion of the disk to which the data is copied is on a different partition of the disk than a disk partition on which the original data is stored.” What Brady actually discloses, however, is “... the user can selectively store data in different storage partitions having different operating characteristics.” That is, Brady only discloses single instances of data stored in different partitions, no copies at all. Brady does not disclose original data on a disk partition and copied data on a different partition as recited in claim 7. Accordingly, claims 7, 11, and 18 recite patentable subject matter, and, in an effort to move the case forward, Applicants have amended the claims to move the patentable subject matter of claims 7, 11, and 18 into the independent claims 1, 8, and 14, thereby clarifying and strengthening the patentability of all the claims in the present application patentable – as amended.

Relations Among Claims

Dependent claims 3, 6, 10, 13, 15, 17, and 20 are rejected under 35 U.S.C. § 102(a) as anticipated by Zwiegincew. These rejections, however, rely on Zwiegincew's anticipation of the elements of the independent claims 1, 8, and 14. Dependent claims 3, 6, 10, 13, 15, 17, and 20 all depend from, and therefore include all the limitations of, independent claims 1, 8, and 14. As shown above, Zwiegincew does not disclose all the limitations of the independent claims and therefore cannot possibly disclose all the limitations of the dependent claims. Dependent claims 3, 6, 10, 13, 15, 17, and 20 are therefore patentable and should be allowed.

Dependent claims 2, 9, and 16 are rejected under 35 U.S.C. § 103(a) as obvious over Zwiegincew in view of Hung (U.S. 5,247,653). These rejections, however, rely on Zwiegincew's anticipation of the elements of the independent claims 1, 8, and 14. Dependent claims 2, 9, and 16 respectively depend from, and therefore include all the limitations of, independent claims 1, 8, and 14. As shown above, Zwiegincew does not disclose any of the limitations of the independent claims and therefore cannot possibly disclose the limitations of the dependent claims for which it is relied upon. Dependent claims 2, 9, and 16 are therefore patentable and should be allowed.

Dependent claims 4, 5, 12, and 19 are rejected under 35 U.S.C. § 103(a) as obvious over Zwiegincew in view of Lee, et al., (U.S. Pub. 2004/0260909). These rejections, however, rely on Zwiegincew's anticipation of the elements of the independent claims 1, 8, and 14. Dependent claims 4, 5, 12, and 19 respectively depend from, and therefore include all the limitations of, independent claims 1, 8, and 14. As shown above, Zwiegincew does not disclose any of the limitations of the independent claims and therefore cannot possibly disclose the limitations of the dependent claims for which it is relied upon. Dependent claims 4, 5, 12, and 19 are therefore patentable and should be allowed.

Conclusion

Claims 1, 3, 6, 8, 10, 13-15, 17, and 20 stand rejected under 35 U.S.C § 102(e) as being anticipated by Zwiegincew. For the reasons set forth above, Zwiegincew does not anticipate claims 1, 3, 6, 8, 10, 13-15, 17, and 20. Applicants therefore traverse the rejections individually to claims 1, 3, 6, 8, 10, 13-15, 17, and 20 under 35 U.S.C § 102(e) and respectfully request reconsideration of these claims in view of these remarks and amendments.

Claims 2, 4, 5, 7, 9, 11, 12, 16, 18, and 19 stand rejected for obviousness under 35 U.S.C. § 103(a) as being obvious over Zwiegincew in view of Hung, Lee, or Brady. Claims 7, 11, and 18 are currently cancelled from further consideration in this case, and, for the reasons set forth above, the proposed modification of Zwiegincew by Hung, Lee, or Brady does not establish a *prima facie* case of obviousness against the remaining dependent claims 2, 4, 5, 9, 12, 16, and 19. Applicants therefore traverse the rejections individually to claims 2, 4, 5, 9, 12, 16, and 19 under 35 U.S.C § 103(a) and respectfully request reconsideration of these claims in view of these remarks and amendments.

Applicants in this Response have amended claims 1, 8, and 14 and cancelled claims 7, 11, and 18 from further consideration in this application. Applicants are not conceding in this application that the original claims are not patentable over the art cited by the Examiner, as the present claim amendments and cancellation are only for facilitating expeditious prosecution of the allowable subject matter. Applicants respectfully reserve the right to pursue these and other claims in one or more continuations or divisional patent applications.

The Commissioner is hereby authorized to charge or credit Deposit Account No. 50-3082 for any fees required or overpaid.

Respectfully submitted,

Date: July 3, 2007

By:



John Biggers
Reg. No. 44,537
Biggers & Ohanian, LLP
P.O. Box 1469
Austin, Texas 78767-1469
Tel. (512) 472-9881
Fax (512) 472-9887
ATTORNEY FOR APPLICANTS